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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/649,933	08/28/2003	Seo-Hyun Cho	1349.1280	6101
21171	7590	04/05/2005	EXAMINER	
STAAS & HALSEY LLP SUITE 700 1201 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			VO, ANH T N	
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DATE MAILED: 04/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	Application No. 10/649,933	Applicant(s) CHO ET AL.	
	Examiner Anh T.N. Vo	Art Unit 2861	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-36 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. ____   |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____  | 6) <input type="checkbox"/> Other: ____                                     |

## **DETAILED ACTION**

### ***Priority***

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Information Disclosure Statement***

The references cited on PTO 1449 have been considered.

### ***Claim Objection***

Claim 1 is objected to because of the following informality: "expanding" should be "containing."

Appropriate correction is required.

## **CLAIM REJECTIONS**

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

Claims 1-4 and 15-24 are rejected under 35 USC 102 (e) as being anticipated by Kim et al. (US Pat. 6,623,092).

Kim et al. disclose in Figures 2-3 an ink cartridge comprising:

- at least one first chamber (160) storing an ink;
- at least one second chamber (120) having an air inflow hole (124) formed at an upper portion thereof to be exposed to an ambient air and an ink supply portion (132) formed at a lower portion thereof and having an ink supply port supplying an ink, the second chamber containing with a negative pressure generating medium (122) storing the ink;
- an intermediate partition (110) having a connecting hole (112) defined in a lower portion thereof, connecting the first and the second chambers (160, 120) to each other, the intermediate partition (110) dividing the first and the second chambers (160, 120);
- wherein a first volume (an unmarked volume containing an element 122) is larger than a second volume (an unmarked volume containing an element 172), the first volume being defined by a first face forming an ink contact surface of the negative pressure generating medium (122) adjacent the connection hole, a second face forming a bottom surface of the intermediate partition in the connecting hole, a third face forming a bottom of the ink cartridge (100), and a first vertical plane extending vertically from a center plane of the intermediate partition and the second volume being defined by the first vertical plane, the second face, the third face, and a second vertical plane extending vertically from a wall of the intermediate partition facing the first chamber (160), preventing the connecting hole (112) from being blocked with the negative pressure generating medium (122) expanding in the second chamber (120);
- wherein the third face comprises an inclined surface (an unmarked inclined surface is at bottom wall of an chamber 120) extending toward the ink supply portion (132) from a position, which is separated by a predetermined distance from a third vertical plane vertically extending from a

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second wall of the intermediate partition facing the second chamber by a predetermined distance, the inclined surface being inclined at a predetermined obtuse angle with respect to a horizontal surface;

- wherein the position is in the second chamber (120);
- wherein a lower surface of the negative pressure generating medium (122) to expand in the second chamber (120) adjacent to the intermediate partition (110) is inclined at an angle corresponding to the angle of the inclined surface before the negative pressure generating medium expands in the second chamber, thereby preventing the negative pressure generating medium from being compressed and expanding in a substantially triangular space defined by an extended plane from the inclined surface of the third face, a non-inclined surface of the third face, and the third vertical plane as the negative pressure generating medium expands in the second chamber;
- wherein the obtuse angle of the inclined surface is measured from a non-inclined portion of the third face;
- wherein a lower surface of the negative pressure generating medium (122) to expand in the second chamber (120) adjacent to the intermediate partition (110) is inclined at an angle corresponding to the angle of the inclined surface before the negative pressure generating medium expands (122) in the second chamber (120), thereby preventing the negative pressure generating medium from expanding in a substantially triangular space formed by the inclined surface of the third face, an extended plane from a non-inclined surface of the third face, and the third vertical plane;
- wherein the third face (an unmarked bottom wall of a chamber 160) comprises a horizontal surface portion parallel to the horizontal plane.
- the ink cartridge comprising magenta, cyan, and yellow ink chambers (Fig. 2);
- wherein the medium chamber (120) contains a negative pressure generating medium (122) including a porous material, wherein the porous material is foam to store ink;
- a filter (130) on a stand pipe between the medium (122) and the ink supply port (132) to guide a flow of the ink;
- wherein a portion of the base of the ink cartridge (100) in the medium chamber side (120) is inclined at an angle between 90 and 180 degrees from a non-inclined portion of the base toward

the ink supply portion (132) (Fig. 3); and

- wherein the inclined portion prevents air bubbles from horizontally moving toward the ink supply port (132); and
- wherein a lower surface of the medium (122) has an inclined angle substantially corresponding to the angle of the inclined surface.

Claims 1, 15-16 and 36 are rejected under 35 USC 102 (e) as being anticipated by Iwanaga et al. (Pub. No. US 2002/0012033).

Iwanaga et al. disclose in Figures 4A-4B, 7B, and 9B-11 an ink jet printer comprising:

- at least one first chamber ((36) storing an ink;
- at least one second chamber (an unmarked chamber containing an element 32) having an air inflow hole (12) formed at an upper portion thereof to be exposed to an ambient air and an ink supply portion (14) formed at a lower portion thereof and having an ink supply port supplying an ink, the second chamber containing with a negative pressure generating medium (32) storing the ink;
- an intermediate partition (38) having a connecting hole (40) defined in a lower portion thereof, connecting the first and the second chambers to each other, the intermediate partition (38) dividing the first and the second chambers;
- wherein a first volume (an unmarked volume containing elements 32, 34) is larger than a second volume (an unmarked volume containing ink) , the first volume being defined by a first face forming an ink contact surface of the negative pressure generating medium (32) adjacent the connection hole (40), a second face forming a bottom surface of the intermediate partition in the connecting hole, a third face forming a bottom of the ink cartridge (10), and a first vertical plane extending vertically from a center plane of the intermediate partition and the second volume being defined by the first vertical plane, the second face, the third face, and a second vertical plane extending vertically from a wall of the intermediate partition facing the first chamber (36), preventing the connecting hole (40) from being blocked with the negative pressure generating

medium (32) expanding in the second chamber;  
- the ink cartridge comprising magenta, cyan, and yellow ink chambers (Fig. 11); and  
- a connection hole blockage preventing structure including a protruding guide (63 or 65) protruding toward the medium chamber, and a cut out portion formed at a corner of the medium (32) corresponding to a portion of the protruding guide (61 or 63) (Figs. 4B and 7B).

*Claim Rejections - 35 U.S.C. § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5-14 and 25-35 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Kim et al. (US Pat. 6,623,092) in view of Tsukuda (US Pat. 6,234,615) and further in view of Jones et al. (US Pat. 6,682,183).

Sato et al. disclose the basic features of the claimed invention were stated above but do not disclose a corner of the lower surface of the negative pressure generating medium has a cut out portion formed in a rounded shape and/or an inclined shape and/or a stepped shape, thereby preventing the negative pressure generating medium from being compressed and expanding in the connecting hole and the position is disposed at a side of the first ink chamber.

Tsukuda discloses in Figure 1 an ink supply system comprising an ink tank (8B) having a corner of the lower surface of the negative pressure generating medium (32) has a cut out

portion formed in a rounded shape, thereby preventing the negative pressure generating medium (32) from being compressed and expanding in the connecting hole (30T).

Jones et al. disclose in Figures 1-2 an ink cartridge (10) comprising the position is disposed at a side of the first ink chamber (14a).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to incorporate the teaching of Tsukuda and Jones et al. in the Kim et al. ink cartridge for the purpose of preventing an ink absorbing foam expanding into communicating hole so that ink from an ink chamber that can easily flow into an ink absorbing foam chamber.

Kim et al. in view of Tsukuda and further in view of Jones et al. disclose the claimed invention except for "the negative pressure generating medium has a cut out portion formed in an inclined shape and/or a stepped shape,". It would have been obvious to one having ordinary skill in the art at the time the invention was made to select changes in the shape of the negative pressure generating medium for the purpose of preventing the negative pressure generating medium expanding into the communicating hole so that ink from an ink chamber that can easily flow into an ink absorbing foam chamber. Since it is a mechanical design expedient for an engineer depending upon a particular environment and the applications in which the ink jet cartridge is to be used. In re Daily, 357 F.2d 669, 149 USPQ 47 (CCPA 1966). See MPEP 2144.04.

#### ***Citation of Pertinent Prior Art***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art references (US Pat. 5,790,158; US Pat. 5,903,294; US Pat. 6,276,785; US Pat. 6,527,381) cited in the PTO 892 form show an ink container that is deemed to be relevant to the present invention. These references should be reviewed.

#### ***CONCLUSION***



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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Anh Vo, whose telephone number is (703) 305-8194. The examiner can normally be reached on Monday to Friday from 8:00 A.M. to 4:00 P.M. The fax number of this Group 2861 is (703) 305-3431 or 305-3432.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.



**ANH T.N. VO**  
**PRIMARY EXAMINER**

April 1, 2005